MOAB includes a partitioning utility, mbpart, that calls the Zoltan library for partitioning meshes for parallel solution (since Zoltan can call the Metis and Scotch partitioning libraries too, these are also available through mbpart). mbpart will generate the partition using the specified method (graph, geometric, and trivial/round-robin partitioning methods are available). By default, the partition is stored as entity sets marked with the PARALLEL_PARTITION tag, whose value is the part #. Using the -t option, the partition can be written as tags on the entities being partitioned. Partitions can be saved to any of the file formats supported by MOAB. If the partitioned file is saved in h5m format, Subset plot and Subset Controls can be used in VisIt to visualize the partitions.

To build this utility, use the following configure options for MOAB:

--with-mpi[=mpi_location] - enables parallel build
--with-zoltan=<zoltan_location> - location of zoltan libraries
--with-parmetis=<parmetis_location> - location of parmetis libraries
--enable-mbzoltan - to specify that mbzoltan should be built

The syntax for using the mbpart utility is:

mbpart <# parts> <infile> <outfile> [-<n>] [{-z|-p|-o} <method>] [-s|-t|-b] [-m <pow>]

-<n> Specify dimension of entities to partition. Default is the largest dimension entity present in input file
-z Specify Zoltan partition method. One of RR, RCB, RIB, HFSC, PHG, or Hypergraph (PHG and Hypergraph are synonymous). Default is: RCB
-p Specify Parmetis partition method
-o Specify OctPart partition method
-s Write partition as tagged sets (Default)
-t Write partition by tagging entities
-b Write partition as both tagged sets and tagged entities
-i <tol> Imbalance tolerance (used in PHG, Hypergraph methods)
-m <pow> Generate multiple partitions, in powers of 2, up to $2^{(pow)}$